



GUIDELINE 20 - CLOSURE AND POSTCLOSURE CARE COST ESTIMATES FOR PUBLICLY AND PRIVATELY OWNED LANDFILLS

North Dakota Department of Health - Division of Waste Management

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I. Rules for Preparing Closure Cost Estimates:

- A. Cost estimates based on the landfills detailed site-specific closure plan. Estimates must assume that closure occurs at the time when costs incurred will be the greatest.
- B. The estimate must equal the cost of hiring a third party to close the largest open area requiring final cover during the life of the facility.

Question: What is the regulatory intent of using closure/post-closure cost estimates based on a "Third Party" Performing the work?

Answer: This ensures that adequate funds will be available to hire a third party to carry out the necessary activities in the event that the owner or operator declares bankruptcy, does not have all the technical expertise necessary or if the state has to hire the contractors to perform the work. A parent or subsidiary is not considered third party.

- C. Salvage value disallowed for sale of equipment or wastes.
- D. Initial cost estimate based on current costs.
 - 1. Updates required for:
 - (a) Annual inflation;
 - (b) Changes in plans that increase or decrease costs;
 - (c) Increased design capacity or increases in the maximum area open;
 - (d) More extensive monitoring requirements; and
 - (e) Changes in the partial closure schedule.
- E. Closure activities that should be included in the cost estimate:
 - 1. Final cap systems
 - (a) Soil (clay, borrow soil, topsoil, etc.)
 - (b) Liner materials
 - (c) Other materials (drainage nets, etc.)
 - (d) Testing/documentation
 - 2. Sedimentation and erosion control devices

3. Gas controls
 - (a) Passive systems (collection barriers, vents, other)
 - (b) Active systems (collection, extractions, recovery, flaring systems, other)
 4. Final landscaping
 - (a) Seeding
 - (b) Fertilizing
 - (c) Mulching
 5. Mobilization/demobilization
 6. Project management, quality assurance/quality control, independent engineers' certification, and related support services (i.e., report preparation, etc.);
 7. Survey plat; and
 8. Closure certification.
 9. Labor
- F. Cost estimates must include adequate detail and necessary figures and computations so they can be verified.

II. Rules for Preparing Post-Closure Care Cost Estimates:

- A. Cost estimate based on detailed site-specific activities required by the post-closure care plan.
- B. Estimate is calculated by multiplying the annual post-closure cost estimate by the number of years of post-closure care (i.e., 30 years).
- C. Estimate based on third-party costs.
- D. Initial cost estimate based on current costs.
 1. Updates required for:
 - (a) Annual inflation;
 - (b) Changes in plans that increase costs; and
 - (c) Increased facility capacity or additional cells.
- E. Post-closure activities that should be included in the cost estimate:
 1. Monitoring (ground water, surface water, explosive gas, leachate and air quality);
 2. Sampling and analytical costs;

3. Leachate management;
 4. Maintenance (preventive/corrective);
 - (a) Leachate collection removal and treatment systems - annual cleaning
 - (b) Operate gas removal systems
 - (c) Well (all)
 - (d) Final cover (mowing, reseeding, erosion control, etc.)
 5. Administration and labor costs;
 6. Filing post-closure notices; and
 7. Post-closure certification.
- F. Cost estimates must include adequate detail and necessary figures and computations so they can be verified.

III. RULES FOR UPDATING COST ESTIMATES FOR INFLATION

- A. Recalculate costs using current dollars; or
- B. Update costs using an inflation factor.

Step 1: The inflation measure used is derived from federal statistics. The source is the price deflator from the Gross Domestic Product that is published in the Commerce Department's *Survey of Current Business* and can be found at the Bureau of Economic Analysis website.

Step 2: Adjust the cost estimate for inflation by multiplying the most recent cost estimate by an amount equal to one plus the inflation rate. For example, if the cost estimate is \$100,000 and the inflation rate is 3.0 percent (0.030) the adjusting procedure is:

Previous year's cost estimate	\$100,000
Inflation factor	x <u>1.03</u>
Updated cost estimate	\$103,000

New cost estimate is basis for level of financial assurance required.